



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,643	02/25/2004	Kuan-Lun Cheng	TSM03-0698	3090
43859	7590	12/02/2005	EXAMINER	
SLATER & MATSIL, L.L.P. 17950 PRESTON ROAD, SUITE 1000 DALLAS, TX 75252			QUINTO, KEVIN V	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,643

Applicant(s)

CHENG ET AL.

Examiner

Kevin Quinto

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2 March 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 2, and 4-32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, and 4-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Chan et al. (United States Patent Application No. US 2005/0093078 A1).
4. In reference to claims 1 and 14, Chan et al. (United States Patent Application No. US 2005/0093078 A1, hereinafter referred to as the "Chan" reference) discloses a similar device and method. Figures 1-9 illustrate a fabrication method for a CMOS structure having a stress creating contact etch stop silicon nitride layer (110 or 130) in which the stress is relaxed by implantation by ions (p.3, paragraph 29). Chan discloses the use of oxygen and carbon ions (p.3, paragraph 29).

Art Unit: 2826

5. With regard to claims 2, 5, 7, 15, 16, 18, 19, 20, 22, 23, and 24, Chan discloses (p.3, paragraph 29-30) the use of a mask in order to prevent ion implantation in all but the selected area (NMOS or PMOS area).

6. In reference to claims 4, 6, 17, and 21, Chan makes it clear that the stress to be modified may be compressive or tensile (p.3, paragraphs 29-30).

7. In reference to claim 8, Chan (US 2005/0093078 A1) discloses a similar device. Figures 1-9 illustrate a CMOS structure with a silicon nitride contact etch stop layer (110 or 130) which overlies one or more NMOS structures and one or more PMOS structures. Chan discloses (p.3, paragraph 29-30) the use of a mask in order to prevent ion implantation in all but the selected area (NMOS or PMOS area). Chan discloses the use of oxygen and carbon ions (p.3, paragraph 29).

8. In reference to claims 9 and 12, Chan discloses that the silicon nitride layer (16) is formed by plasma enhanced chemical vapor deposition (p.2-3, paragraph 27).

9. With regard to claim 10, Chan makes it clear that the silicon nitride layer may be formed by a thermal CVD process (p.2-3, paragraph 27).

10. With regard to claims 11 and 13, Chan discloses (p.3, paragraph 29-30) the use of a mask in order to prevent ion implantation in all but the selected area (NMOS or PMOS area).

11. In reference to claim 25, Chan (US 2005/0093078 A1) discloses a similar method. Figures 1-9 illustrate a fabrication method for a CMOS structure having a stress creating contact etch stop silicon nitride layer (110 or 130) in which the stress is relaxed by implantation by ions (p.3, paragraph 29). Chan discloses the use of oxygen

Art Unit: 2826

and carbon ions (p.3, paragraph 29). Chan discloses (p.3, paragraph 29-30) the use of a mask in order to prevent ion implantation in all but the selected area (NMOS or PMOS area).

12. With regard to claims 26, 27, 30, 32, Chan discloses (p.3, paragraph 29-30) the use of a mask in order to prevent ion implantation in all but the selected area (NMOS or PMOS area).

13. In reference to claims 28 and 31, Chan discloses that the silicon nitride layer (16) is formed by plasma enhanced chemical vapor deposition (p.2-3, paragraph 27).

14. With regard to claim 29, Chan makes it clear that the silicon nitride layer may be formed by a thermal CVD process (p.2-3, paragraph 27).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (571) 272-1920. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2826

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KVQ



NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800